

In the claims:

Please amend the claims as follows:

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1. (Currently amended) A travel planning system comprising:
- a requirements generator module ~~configured~~ to generate a plurality of travel requirements; and
 - a selection module ~~configured~~ to output a set of diverse travel options smaller than a candidate set of travel options by selecting from the candidate set of travel options, for each travel requirement in the plurality, one or more travel options that satisfy that travel requirement, wherein the candidate set is represented by using a data structure that compactly stores the candidate set of travel options. ~~compact representation.~~
2. (Currently amended) The travel planning system of claim 1 wherein the ~~compact representation~~ is data structure comprises a pricing graph data structure.
3. (Previously added) The travel planning system of claim 1 further comprising a display to display the diverse set of travel options.
4. (Currently amended) The travel planning system of claim 1 further comprising:
- a travel option generator module ~~configured~~ to generate a first ordered set of travel options using a first preference function and a second ordered set of travel options using a second preference function, and
 - wherein the selection module ~~is further configured to output~~ outputs a set of diverse travel options ~~for~~ by selecting a first and second number of travel options from each of the first and second ordered set of travel options, respectively.
5. (Previously added) The travel planning system of claim 1 wherein the requirements generator module further comprises a template.

6. (Previously added) The travel planning system of claim 1 wherein at least one of the travel requirements within the plurality is not a user entered travel requirement.

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7. (Currently amended) The travel planning system of claim 1 wherein the plurality of travel requirements comprise at least one of all trips travel on a predefined particular carrier, all non-stop trips travel, all outbound trips travel departing in a predefined time period, all return trips travel departing in a predefined time period, all non-stop trips travel on a predefined airline, or all trips travel with an outbound departure on a first predefined date and a return trip arrival on a second predefined date.

8. (Previously added) The travel planning system of claim 7 wherein the predefined time period comprises morning, afternoon, evening or a predefined date.

Claims 9-26. (Cancelled)

27. (New) The travel planning system of claim 1 wherein the compact data structure comprises a directed acyclic graph.

28. (New) The travel planning system of claim 1 wherein the compact data structure comprises a grammar.

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29. (New) A method for generating a diverse set of travel options, the method comprising:

receiving a candidate set of travel options based on a user input, the candidate set of travel options represented using a data structure that compactly stores the candidate set of travel options;

enumerating a first ordered list of travel options from the data structure that are compliant with a first travel requirement;

enumerating a second ordered list of travel options from the data structure that are compliant with a second travel requirement; and

combining a first number of travel options from the first ordered list with a second number of travel options from the second ordered list to output a diverse set of travel options, smaller than a candidate set of travel options, that includes at least one travel option compliant with the first travel requirement and at least one travel option compliant with second travel requirement.

30. (New) The method of claim 29 further comprising generating the first travel requirement and the second travel requirement based on a fixed list.

31. (New) The method of claim 29 further comprising generating the first travel requirement and the second travel requirement based on a predefined number of travel options required for the diverse set of travel options.

32. (New) The method of claim 29 further comprising generating the first travel requirement and the second travel requirement based on an ordering function.

33. (New) The method of claim 29 further comprising generating the first travel requirement and the second travel requirement based on the candidate set of travel options.

34. (New) The method of claim 29, wherein the data structure includes nodes that hold one or more values that can be used to provide travel options.

35. (New) The method of claim 34,

wherein enumerating the first order list further comprises,
for the first travel requirement,

storing an indication of those nodes in the data structure that are
compliant with the first travel requirement, and

enumerating the first ordered list of travel options from the data
structure ignoring non-compliant nodes; and

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wherein enumerating the second order list further comprises,
for the second travel requirement,
storing an indication of those nodes in the data structure that are
compliant with the second travel requirement, and
enumerating the second ordered list of travel options from the data
structure ignoring non-compliant nodes.

36. (New) The method of claim 34 wherein enumerating a first ordered list of travel options further comprises:

identifying children nodes for each parent node of the data structure; and
identifying a best solution for each node based on a best solution for each of the children nodes of the respective parent node.

37. (New) The method of claim 34 wherein the data structure comprises a total number of nodes less than a total number of travel options in the candidate set of travel options.

38. (New) The method of claim 34 wherein the nodes comprise at least one of an AND node, an OR node, and a terminal node.

39. (New) The method of claim 29 further comprising:

for a third travel requirement,
determining if the third travel requirement is fulfilled by the first travel requirement;
determining if the third travel requirement is fulfilled by the second travel requirement; and
eliminating the third travel requirement if the third travel requirement is fulfilled by the first travel requirement or the second travel requirement.

40. (New) The method of claim 29 further comprising rendering the diverse set of travel options on an output device.

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41. (New) The method of claim 29 wherein at least one of the first and second travel requirements is not a user entered travel requirement.

42. (New) The method of claim 29 wherein the first and second travel requirements comprise at least one of travel on a particular carrier, non-stop travel, outbound travel departing in a predefined time period, return travel departing in a predefined time period, non-stop travel on a particular airline, or travel with an outbound departure on a first predefined date and a return arrival on a second predefined date.

43. (New) The method of claim 42 wherein the predefined time period comprises morning, afternoon, evening or a predefined date.

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44. (New) The method of claim 29 further comprising defining a template of travel requirements.

45. (New) The method of claim 44 further comprising generating the first and second travel requirements based on the template and the candidate set of travel options.

46. (New) The method of claim 44 further comprising analyzing the candidate set of travel options to determine parameter values for the template.

47. (New) The method of claim 44 wherein the template comprises at least one of travel on a particular carrier, non-stop travel, outbound travel departing in a predefined time period, return travel departing in a predefined time period, non-stop travel on a particular airline, or travel with an outbound departure on a first predefined date and a return arrival on a second predefined date.

48. (New) The method of claim 47 wherein the predefined time period comprises morning, afternoon, evening or a predefined date.

49. (New) The method of claim 29 wherein the data structure comprises a directed acyclic graph.

50. (New) The method of claim 29 wherein the data structure comprises a grammar.

51. (New) An article of manufacture having computer-readable program portions embodied therein for generating a diverse set of travel options, the article comprising instructions for causing a processor to:

receive a candidate set of travel options based on a user input, the candidate set of travel options represented by a data structure including nodes that hold one or more values that can be used to provide travel options;

for a first travel requirement,

indicate nodes in the data structure that are compliant with the first travel requirement, and

enumerate a first ordered list of travel options from the data structure ignoring non-compliant nodes;

for a second travel requirement,

indicate nodes in the data structure that are compliant with the second travel requirement, and

enumerate a second ordered list of travel options from the data structure ignoring non-compliant nodes; and

combine a first number of travel options from the first ordered list with a second number of travel options from the second ordered list to output a diverse set of travel options, smaller than a candidate set of travel options, that includes at least one travel option compliant with the first travel requirement and at least one travel option compliant with second travel requirement.

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